

CLAIMS

I claim:

- 5        1. A method of making a memory card card, comprising the steps of:  
            adding circuit elements to a circuit board, said circuit board includes a set of test  
            terminals;  
            testing one or more of said circuit elements using said test terminals; and  
            covering said test terminals with a conformal contact coating in order to prevent  
10     access to said test terminals.
2.        A method according to claim 1, wherein:  
            said step of covering includes applying a liquid directly to a first surface of said  
            circuit board.
- 15        3.        A method according to claim 2, wherein:  
            said liquid includes a solder mask.
- 20        4.        A method according to claim 2, wherein:  
            said liquid includes a photoresist.
5.        A method according to claim 2, wherein:  
            said liquid includes a thermoplastic.
- 25        6.        A method according to claim 2, wherein:  
            said liquid includes an epoxy.

7. A method according to claim 2, wherein:  
said liquid includes polyimide.
- 5 8. A method according to claim 2, wherein:  
said liquid is applied using a screen printing process.
9. A method according to claim 1, wherein:  
said step of covering includes applying a film directly to a first surface of said  
circuit board.
- 10 10. A method according to claim 9, wherein:  
said film includes an adhesive on one surface.
- 15 11. A method according to claim 9, wherein:  
said film includes mylar.
12. A method according to claim 9, wherein:  
said film includes polyimide.
- 20 13. A method according to claim 1, wherein:  
said step of adding circuit elements includes adding a flash memory array to said  
circuit board.
- 25 14. A method according to claim 1, wherein:  
said step of adding circuit elements includes mounting a first die on said circuit  
board and mounting a second die on said first die.

15. A method according to claim 14, wherein:  
said first die includes a flash memory array and said second die includes a  
controller.
- 5 16. A method according to claim 14, wherein:  
said first die is wire bonded to said circuit board; and  
said second die is wire bonded to said circuit board.
- 10 17. A method according to claim 1, wherein:  
said circuit board includes a conductive layer and a first portion of said  
conductive layer forms said test terminals.
- 15 18. A method according to claim 17, wherein:  
a second portion of said conductive layer forms user terminals;  
said user terminals are positioned on an outside surface of said memory card; and  
said user terminals are in communication with at least a subset of said circuit  
elements.
- 20 19. A method according to claim 1, wherein:  
said step of adding circuit elements includes performing a transfer mold process  
to encapsulate said circuit elements without covering said test terminals.
- 25 20. A method according to claim 1, wherein:  
said step of covering is performed after said circuit board is removed from a strip  
of circuit boards.
21. A method according to claim 1, wherein:

said step of covering is performed before said circuit board is removed from a strip of circuit boards.

22. A method according to claim 1, wherein:  
5       said memory card is a flash memory card.
23. A method according to claim 22, wherein:  
      said step of covering includes applying a liquid directly to a first surface of said circuit board.  
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24. A method according to claim 22, wherein:  
      said step of covering includes applying a film directly to a first surface of said circuit board.
- 15       25. A method of making a peripheral card, comprising the steps of:  
          adding circuit elements to a plurality of circuit boards of a strip of circuit boards,  
          each of said plurality of circuit boards includes a set of test terminals;  
          separating said connected circuit boards;  
          testing said circuit elements of said circuit boards using said test terminals; and  
20       applying a conformal contact coating on a first surface of each of said circuit boards to cover said test terminals and prevent access to said test terminals such that a particular circuit board has its test terminals covered after said particular circuit board has been tested.
- 25       26. A method according to claim 25, wherein:  
      said step of separating is performed after said step of applying.

27. A method according to claim 25, wherein:

said step of separating is performed prior to said step of applying.

28. A method according to claim 25, wherein:

5 said step of applying includes applying a liquid directly to a first surface of said circuit boards.

29. A method according to claim 25, wherein:

10 said step of applying includes applying a film directly to a first surface of said circuit boards.

30. A method according to claim 25, wherein:

said step of adding circuit elements includes mounting a first die on a first circuit board and mounting a second die on said first die;

15 said first die includes a flash memory array and said second die includes a controller;

said first die is wire bonded to said first circuit board; and

said second die is wire bonded to said first circuit board.

20 31. A method according to claim 25, wherein:

said peripheral card is a memory card.

32. A peripheral card manufactured according to a process comprising the steps of:

25 adding circuit elements to a circuit board, said circuit board includes a set of test terminals;

testing one or more of said circuit elements using said test terminals; and

applying a conformal contact coating on a first surface of said circuit board to cover said test terminals and prevent access to said test terminals.

33. A peripheral card according to claim 32, wherein:  
5       said step of applying includes applying a liquid directly to a first surface of said circuit board.

34. A peripheral card according to claim 32, wherein:  
10      said step of applying includes applying a film directly to a first surface of said circuit board.

35. A peripheral card according to claim 32, wherein:  
15      said circuit board includes a first die mounted on said circuit board and a second die mounted on said first die;  
          said first die includes a flash memory array and said second die includes a controller;  
          said first die is wire bonded to said circuit board; and  
          said second die is wire bonded to said circuit board.

20       36. A peripheral card according to claim 32, wherein:  
          said circuit board includes a conductive layer;  
          a first portion of said conductive layer forms said test terminals;  
          a second portion of said conductive layer forms user terminals;  
          said user terminals are positioned on an outside surface of said peripheral card;  
25      and

          said circuit elements are encapsulated by a transfer mold process without covering

said test terminals.

37. A peripheral card according to claim 32, wherein:  
said peripheral card is a memory card.

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38. A peripheral card, comprising:  
a circuit board;  
circuit elements on said circuit board;  
a set of user terminals on said circuit board, said user terminals are in  
10 communication with at least a subset of said circuit elements;  
a set of test terminals on said circuit board, said test terminals are in  
communication with one or more of said circuit elements;  
an enclosure that covers a portion of said circuit board and said circuit elements  
without covering said set of user terminals and said set of test terminals; and  
15 a conformal contact coating on a first surface of said circuit board covering said  
test terminals and preventing access to said test terminals.

39. A peripheral card according to claim 38, wherein:  
said conformal contact coating is applied as a liquid directly to said first surface  
20 of said circuit board.

40. A peripheral card according to claim 38, wherein:  
said conformal contact coating includes a film that is applied directly to said first  
surface of said circuit board.

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41. A peripheral card according to claim 38, wherein:  
said circuit elements board include a first die mounted on said circuit board and a

second die mounted on said first die.

42. A peripheral card according to claim 41, wherein:  
said first die is wire bonded to said circuit board; and  
5 said second die is wire bonded to said circuit board.
43. A peripheral card according to claim 42, wherein:  
said first die includes a flash memory array and said second die includes a controller.  
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44. A peripheral card according to claim 41, wherein:  
said first die includes a flash memory array and said second die includes a controller.  
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45. A peripheral card according to claim 38, wherein:  
said circuit board includes a conductive layer;  
a first portion of said conductive layer forms said test terminals;  
a second portion of said conductive layer forms said user terminals; and  
said user terminals are positioned on an outside surface of said peripheral card.  
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46. A peripheral card according to claim 38, wherein:  
said peripheral card is a memory card.  
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47. A method performed for a peripheral card, comprising the steps of:  
testing one or more circuit elements of a first peripheral card using one or more  
test terminals of said first peripheral card; and  
covering said test terminals with a conformal contact coating in order to prevent

access to said test terminals.

48. A method according to claim 47, wherein:  
said step of covering includes applying a liquid directly to said first peripheral  
5 card.
49. A method according to claim 47, wherein:  
said step of covering includes applying a film directly to said first peripheral card.
- 10 50. A method according to claim 47, wherein:  
said circuit elements include a flash memory array.
51. A method according to claim 47, wherein:  
said first peripheral card is a memory card.

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